

CLAIMS

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1. A data processing system comprising: input means for inputting stream data; file forming means for cutting the input data at a predetermined file length into a file and assigning a file name to the file; and storage means for recording the formed file.

2. A data processing system comprising: input means for inputting stream data; management information analyzing means for analyzing management information transmitted together with the input data; file forming means for cutting the input data at a predetermined file length and adding part or all of the management information obtained by said management information decoding means to form a file; and storage means for recording the formed file.

3. A data processing system according to claim 1 or 2, further comprising a cutting position definer for setting a start point and an end point of cutting of the file from the input data when the file is formed or before the file is formed, wherein the file forming means cuts the input data in accordance with the set start and end points.

4. A data processing system according to claim 1, the file name assigned by the file forming means is generated by use of at least one of the following: a recording date and time recorded on the storage means; management information transmitted together with the input data;

information on a type of an output device outputting the input data; contents of the input data; and a formation date and time of the input data.

5. A data processing system according to claim 2, wherein part or all of the management information is added to each file, and the part or all of the management information is recorded onto a recording area other than a recording area of the file.

6. A data processing method for a system in which a recorder and a receiver are connected and data processing is performed when recording data is transmitted from the recorder to the receiver, wherein in the data processing, a transmission method is switched in accordance with management information added to the transmitted recording data and a type of the receiver.

7. A data processing method according to claim 6, wherein in the switching of the transmission method, the receiver has a plurality of reception methods and the reception method is switched based on a type of the transmitted recording data.

8. A data processing method according to claim 6, wherein when the recording data is of a type that the receiver cannot receive, the recording data is transmitted after converted into data of a type that the receiver can receive.

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9. A file managing method wherein an image to which information on recording date and time is added is reproduced from a recording medium on which the image is recorded, a recording discontinuity position of the image recorded on the recording medium is detected, the image is divided at the detected recording discontinuity position to form files, and certain file information is generated.

10. A file managing method according to claim 9, wherein the information on recording date and time added to the image formed into the files is extracted, and a file name based on the extracted recording date and time is generated.

11. A file managing method according to claim 10, wherein to detect the recording discontinuity position of the image recorded on the recording medium, a flag is detected that is representative of a position where recording of a series of images is started.

12. A file managing method according to claim 10, wherein when the image is recorded with the information on the recording date and time being added every predetermined number of frames, to detect the recording discontinuity position of the image recorded on the recording medium, discontinuity of the information on the recording date and time is detected.

13. A file managing method according to claim 9, 10,

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11 or 12, some frames are selected from the image formed into the files to form file information.

14. A data recorder for recording digital data, comprising: reproducing means for reproducing an image to which information on recording date and time is added from a recording medium on which the image is recorded; detecting means for detecting a recording discontinuity position of the image recorded on the recording medium; and forming-image-into-file means for dividing the image at the detected recording discontinuity position to form files and generating certain file information for each of the files.

15. A data recorder according to claim 14, wherein the forming-image-into-file means extracts the information on the recording date and time added to the image formed into the files, and generates a file name representing the extracted recording date and time.

16. A data recorder according to claim 15, wherein the detecting means detects a flag representative of a position where recording of a series of images is started.

17. A data recorder according to claim 15, wherein when the image is recorded with the information on the recording date and time being added every predetermined number of frames, the detecting means detects discontinuity of the information on the recording date and time.

18. A data recorder according to claim 14, 15, 16 or

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17, wherein the forming-image-into-file means selects some frames from the image formed into the files to form file information.

19. A file managing method wherein by use of a data recorder in which data is recorded from a head of a recording medium and recording end position information representative of a position where recording is ended can be recorded,

file information with the data as a file is generated, data is managed so that the file information is recorded after the data is recorded, and a position where the recording of the data is ended is managed as the recording end position information.

20. A file managing method wherein by use of a data recorder in which data is recorded from a head of a recording medium and recording end position information representative of a position where recording is ended can be recorded,

file information with the data as a file is generated, data is managed so that the file information is repetitively recorded twice after the data is recorded, and a position where the recording of the file information is ended is managed as the recording end position information.

21. A file managing method wherein by use of a data recorder in which data is recorded from a head of a recording

medium while being divided into at least one area, and recording end position information representative of a position where recording is ended can be recorded,

file information with the data as a file is generated, data is managed so that the file information is recorded as a different area after the data is recorded, and a position where the first recording of the file information is ended is managed as the recording end position information.

22. A data recorder in which data is recorded from a head of a recording medium while being divided into at least one area, and recording end position information representative of a position where recording is ended can be recorded, said data recorder comprising:

file information generating means for generating file information with the data as a file; first recording means for recording the data and the file information; and second recording means for recording the recording end position information.

23. A data recorder according to claim 22, wherein the first recording means records the file information after the data is recorded, and the second recording means records a position where the recording of the data is ended as the recording end position information.

24. A data recorder according to claim 22, wherein

the first recording means repetitively records the file information twice after the data is recorded, and the second recording means records a position where the first recording of the file information is ended as the recording end position information.

25. A data recorder according to claim 22, wherein the first recording means records the file information as a different area after the data is recorded, and the second recording means records a position where the recording of the file information is ended as the recording end position information.

26. A recorder/reproducer for recording and reproducing a digital video and audio coded signal of a predetermined format onto and from a recording medium in units of a predetermined recording packet, in which of the digital video and audio coded signal, a codeword of a direct current component of each of small blocks constituting a frame is present in a fixed position in the recording packet,

wherein an end-of-block code representing that the codeword of the small block is discontinued hereinafter at the code is disposed in an area to which the codeword of the small block is assigned, a part of the area to which the codeword of the small block is assigned, which part is behind the end-of-block code is set as a general-purpose data recording area, and the input data is assigned to the

general-purpose data recording area.

27. A recorder/reproducer for recording and reproducing a digital video and audio coded signal of a predetermined format onto and from a recording medium in units of a predetermined recording packet, in which of the digital video and audio coded signal, a direct current component of each of blocks constituting a frame, class information defining a method of quantizing the small blocks and motion information which is information on motion of each small block from a previous frame are present in a fixed position in the recording packet,

wherein a part of the area to which the codeword of the small block is assigned, which part is behind an end-of-block code, an area where the class information is recorded and an area where the motion information is recorded are set as a general-purpose data recording area, and the input data is assigned to the general-purpose data recording area.

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28. A recorder/reproducer according to claim 26 or 27, wherein the end-of-block code is disposed immediately behind the codeword of the direct current component of the small block.

29. A recorder/reproducer according to claim 26 or 27, wherein a part in a predetermined recording packet, which part is behind the end-of-block code of each small

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block is set as an added information recording area, a part in the remaining recording packets, which part is behind the end-of-block code of each small block is set as the general-purpose data recording area, the input data is recorded in the general-purpose recording area, and added information which is information on the input data is recorded in the added information recording area.

30. A recorder/reproducer according to claim 29, wherein the added information is repetitively recorded several times in the added information recording area.

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31. A recorder/reproducer according to claim 26 or 27, wherein when the input data is a digital video and audio coded signal of a predetermined format, the input data is recorded as it is, and when the input data is other than the digital video and audio coded signal of the predetermined format, the input data is assigned to the general-purpose data recording area.

32. A recorder/reproducer according to claim 31, wherein a data-type-specific code representative of a type of recorded data is recorded in a predetermined position of a track which is a cluster of a predetermined number of recording packets.

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33. A recorder/reproducer according to claim 26 or 27, wherein in-track data amount information representative of an amount of data actually recorded on

each track is recorded in a predetermined position in each track.

34. A recorder/reproducer according to claim 26 or 27, wherein recording is performed after the data in the general-purpose data recording area in a track is all invalidated, and invalid track information representing that the data in the general-purpose data recording area in the track is all invalid is recorded in a predetermined position in the track.

35. A recorder/reproducer according to claim 26 or 27, wherein data input as one file is recorded on a continuous track.

36. A converting method for converting input data into a format of a digital video and audio coded signal having units of a predetermined transmission packet, where a direct current component of each of small blocks constituting a frame is present in a fixed position in the transmission packet,

wherein an end-of-block code is added in an area where a codeword of each of the small blocks is disposed, a part of the area where the codeword of the small block is disposed, which part is behind the end-of-block code is set as a general-purpose data disposition area, and the data is disposed in the general-purpose data disposition area and converted.

37. A converting method for converting input data into a format of a digital video and audio coded signal having units of a predetermined transmission packet, where a direct current component of each of small blocks constituting a frame, class information and motion information are present in a fixed position in the transmission packet,

wherein a part of an area where a codeword of the small block is disposed, which part is behind the end-of-block code, an area where the class information is recorded and an area where the motion information is recorded are set as a general-purpose data disposition area, and the data is disposed in the general-purpose data disposition area and converted.

38. A converting method according to claim 36 or 37, wherein conversion is performed with the end-of-block code being disposed immediately behind the codeword of the direct current component of the small block.

39. A converting method according to claim 36 or 37, wherein conversion is performed so that the input data is disposed in the general-purpose data recording area of a predetermined recording packet and added information which is information on the data is disposed in the general-purpose data recording areas of the other recording packets.

40. A converting method according to claim 36 or 37,

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wherein when the input data is a digital video and audio coded signal of a predetermined format, the input data is output as it is, and when the input data is other than the digital video and audio coded signal of the predetermined format, the input data is disposed in the general purpose recording area and converted.

41. A converting method according to claim 40, wherein conversion is performed with a data-type-specific code representative of a type of the input data being added so as to be disposed in a predetermined position of a track.

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42. A converting method according to claim 36 or 37, wherein conversion is performed with in-track data amount information representative of an amount of data actually assigned to each track being added so as to be disposed in a predetermined position of each track.

43. A converting method according to claim 36 or 37, wherein data disposed so that data in the general-purpose recording area in each track is all invalid is generated, and conversion is performed with invalid track information representing that the data in the general-purpose data recording area in each track is all invalid being added so as to be disposed in a predetermined position in each track.

44. A converting method according to claim 36 or 37, wherein data input as one file is converted so as to be disposed on a continuous track.

45. A converting method using as an input signal a digital video and audio coded signal having units of a certain transmission packet of a format where a codeword of a direct current component of each of small blocks constituting a frame is present in a fixed position in the transmission packet,

wherein a part of an area where the codeword of the small block of the input signal is disposed, which part is behind an end-of-block code is set as a general-purpose data area, and data is output from the general-purpose data area.

46. A converting method using as an input signal a digital video and audio coded signal having units of a predetermined transmission packet of a format where a codeword of a direct current component of each of small blocks constituting a frame, class information and motion information are present in a fixed position in the transmission packet,

wherein a part of an area where the codeword of the small block of the input signal is disposed, which part is behind an end-of-block code, an area where the class information is recorded and an area where the motion information is recorded are set as a general-purpose data area, and data is output from the general-purpose data areas.

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47. A converting method according to claim 45 or 46, wherein a data-type-specific code is detected from the input signal, and when the data-type-specific code represents that a digital video and audio coded signal of a predetermined format is recorded, the input signal is output, and when the data-type-specific code represents that data other than the digital video and audio coded signal of the predetermined format is recorded, data is output from the general-purpose data area.

48. A converting method according to claim 45 or 46, wherein in-track data amount information of each track of the input signal is obtained, and only data of an amount represented by the in-track data amount information is output from the general-purpose data recording area in each track of the digital video and audio coded signal.

49. A converting method according to claim 45 or 46, wherein invalid track information of each track of the input signal is searched for, and no data is output as effective data from the general-purpose data recording area of a track where the invalid track information is detected.

50. A recorder/reproducer for recording and reproducing a digital video and audio coded signal of a predetermined format in units of a predetermined recording packet,

in which of the digital video and audio coded signal,

a codeword of a direct current component in codewords of each of small blocks constituting a frame is present in a fixed position in the recording packet,

wherein an end-of-block code is disposed in an area to which the codeword of each small block in a predetermined track is assigned, a part of the area to which the codeword of the small block is assigned, which part is behind the end-of-block code, is set as a file management information recording area, and file management information which is information on files recorded in a recording medium is assigned to the file management information recording area.

51. A recorder/reproducer for recording and reproducing a digital video and audio coded signal of a predetermined format in units of a predetermined recording packet,

in which of the digital video and audio coded signal, a direct current component of each of small blocks constituting a frame, class information and motion information are present in a fixed position in the recording packet,

wherein a part of an area to which a codeword of each small block is assigned, which part is behind an end-of-block code, an area where the class information is recorded and an area where the motion information is recorded are set as a file management information recording

area, and file management information is assigned to the file management information recording area.

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52. A recorder/reproducer according to claim 50 or 51, wherein the end-of block code is added immediately behind a code of the direct current component of each small block.

53. A recorder/reproducer according to claim 50 or 51, wherein the file management information is recorded on a continuous track.

54. A recorder/reproducer according to claim 50 or 51, wherein the file management information is recorded behind data recorded on the recording medium.

55. A recorder/reproducer according to claim 50 or 51, wherein in a latest file management information recording area, latest management information of all the files on the recording medium is recorded.

56. A recorder/reproducer according to claim 50 or 51, wherein when the file management information is recorded, the file management information recording area that is already present on the recording medium is invalidated.

57. A recorder/reproducer according to claim 50 or 51, wherein when data is newly additionally recorded on a recording medium where data and file management information on the data are recorded, a previous file management information recording area is overwritten with the newly

added data.

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58. A recorder/reproducer according to claim 50 or 51, wherein as the file management information, the following are used: an update date and time of each file; file start position information which is information on a start position, on a recording medium, of each file; information on a file size; and file end position information which is information on an end position of a file on a recording medium, or track number information which is information on the number of tracks used for file recording.

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~~58~~ 59. A recorder/reproducer according to claim 50 or 51, wherein a file start flag which is information representing that a start position of a file is present is recorded in a predetermined position on a track where a start position of each file is present.

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~~59~~ 60. A recorder/reproducer according to claim 50 or 51, wherein a file end flag which is information representing that an end position of a file is present is recorded in a predetermined position on a track where an end position of each file is present.

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60. A recorder/reproducer according to claim 50 or 51, wherein a file ID flag which is information for distinguishing the file from other files is recorded in a predetermined position on a track where each file is present.

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61. A recorder/reproducer according to claim 50 or 51, wherein in a track in the file management information recording area, a file management information track flag which is information representing that said track is a track in the file management information recording area is set.

62. A recorder/reproducer according to claim 50 or 51, wherein an index ID which is information representative of a break of data is set in a track where the file management information recording area is present.

63. A recorder/reproducer according to claim 50 or 51, wherein to delete the file management information recording area, at least a file management information track flag and an index ID are rewritten so as to be invalidated.

64. A recorder/reproducer according to claim 50 or 51, wherein file management information presence information which is information representing whether the file management information recording area is written on the recording medium or not is recorded.

65. A recorder/reproducer according to claim 50 or 51, wherein file management information presence

information is stored in an auxiliary information storage medium attached to a case housing the recording medium.

~~67~~ 66. A recorder/reproducer according to claim 50 or 51, wherein file management information area position information which is information on a position, on the recording medium, of the file management information recording area is stored in an auxiliary information storage medium attached to a case housing the recording medium.

~~68~~ 67. A converting method for converting input data into a format of a digital video and audio coded signal having units of a predetermined transmission packet, where a direct current component of each of small blocks constituting a frame is present in a fixed position in the transmission packet,

wherein an end-of-block code is added in an area where a codeword of each small block is disposed, a part of the area where the codeword of the small block is disposed, which part is behind the end-of-block code is set as a file management information area, and conversion is performed with file management information on the data being disposed in the file management information area.

~~69~~ 68. A converting method for converting input data into a format of a digital video and audio coded signal having units of a predetermined transmission packet, where a direct current component of each of small blocks

constituting a frame, class information and motion information are present in a fixed position in the transmission packet,

wherein a part of an area where a codeword of the small block is disposed, which part is behind the end-of-block code, an area where the class information is recorded and an area where the motion information is recorded are set as a file management information area, and conversion is performed with file management information on the data being disposed in the file management information area.

~~70~~ 69. A converting method according ^{to claim 68 or 69} ~~to claim 67 or 68~~, wherein conversion is performed with the end-of-block code being disposed immediately behind the codeword of the direct current component of the small block.

~~71~~ 70. A converting method according to claim ~~67~~⁸ or ~~68~~⁹, wherein conversion is performed with the file management information being disposed on a continuous track.

~~72~~ 71. A converting method using as an input a digital video and audio coded signal having units of a predetermined transmission packet, where a codeword of a direct current component of each of small blocks constituting a frame is present in a fixed position in the transmission packet,

wherein file management information is output from a part of an area where the codeword of the small block of the input signal is disposed, which part is behind an

end-of-block code.

~~13~~72. A converting method using as an input a digital video and audio coded signal having units of a predetermined transmission packet, where a direct current component of each of small blocks constituting a frame, class information and motion information are present in a fixed position in the transmission packet,

wherein file management information is output from a part of an area where a codeword of the small block of the input signal is disposed, which part is behind an end-of-block code, an area in which the class information is recorded and an area in which motion information is recorded.

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